

WHAT IS CLAIMED IS:

1. A process for producing a cellulose membrane having a refined surface, comprising the steps of:

(a) preparing a feedstock membrane from a cellulose membrane casting solution by phase inversion in an evaporation process, and

(b) prior to drying the resulting feedstock membrane, removing impurities from at least one side of said feedstock membrane from which the solvent is evaporated in the evaporation process of step (a).

2. A process according to claim 1, wherein the removal of impurities is continued as long as unevaporated solvent remains in the membrane.

3. A process according to claim 1, wherein step (b) comprises bringing the side of the membrane from which impurities are to be removed, into contact with at least one cleansing agent or cleansing device.

4. A process according to claim 3, wherein the impurities are removed by a cleansing fluid.

5. A process according to claim 4, wherein the cleansing fluid is a gas.

6. A process according to claim 5, wherein the impurities are removed by a pressurized gas stream.

7. A process according to claim 5, wherein the gas is air.

8. A process according to claim 4, wherein the cleansing fluid is a liquid.

9. A process according to claim 8, wherein the impurities are removed by a pressurized stream of liquid.

10. A process according to claim 3, wherein the impurities are removed by a cleansing device selected from the group consisting of wipers and suction devices.

11. A process according to claim 1, wherein, in step (b), the membrane passes through:

- (i) a first rinsing device;
- (ii) a second rinsing device; and
- (iii) at least one wiper.

12. A process according to claim 11, wherein the membrane in the second rinsing device is simultaneously contacted with at least one additive.

13. A process according to claim 12, wherein said at least one additive is a wetting agent.

14. A process according to claim 3, wherein the membrane is contacted with a cleansing agent comprising at least one liquid selected from the group consisting of water and alcohols containing from 1 to 6 carbon atoms.

15. A process according to claim 1, wherein the membrane is composed of at least one cellulosic material selected from the group consisting of cellulose nitrate and cellulose acetate.

16. A process according to claim 1, wherein the membrane exhibits a pore width of from 0.01 to 12 μm .

17. A process according to claim 16, wherein membrane exhibits a pore width of greater than 0.45 μm .

18. A surface-refined membrane composed of cellulose, produced by a process comprising the steps of:

- (a) preparing a feedstock membrane from a membrane casting solution by phase inversion in an evaporation process, and
- (b) prior to drying the resulting feedstock membrane, removing impurities from at least one side of the feedstock membrane from which solvent has been evaporated in the evaporation process of step (a).

19. A surface-refined membrane according to claim 18, wherein the removal of impurities is continued until the membrane is free of unevaporated solvent.

20. A surface-refined membrane according to claim 18, wherein step (b) comprises bringing the side of the membrane from which impurities are to be removed, into contact with at least one cleansing agent or cleansing device.

21. A surface-refined membrane according to claim 20, wherein the impurities are removed by a cleansing fluid.

22. A surface-refined membrane according to claim 21, wherein the cleansing fluid is a gas.

23. A surface-refined membrane according to claim 22, wherein the impurities are removed by a pressurized gas stream.

24. A surface-refined membrane according to claim 22, said gas is air.

25. A surface-refined membrane according to claim 21, wherein the cleansing fluid is a liquid.

26. A surface-refined membrane according to claim 25, wherein the impurities are removed by a pressurized liquid stream.

27. A surface-refined membrane according to claim 20, wherein the membrane is contacted with at least one cleansing device selected from the group consisting of wipers and suction devices.

28. A surface-refined membrane according to claim 18, wherein, in step (b), the membrane passes through:

- (i) a first rinsing device;
- (ii) a second rinsing device; and
- (iii) at least one wiper.

29. A surface-refined membrane according to claim 28, wherein membrane in the second rinsing device is contacted with at least one additive.

30. A surface-refined membrane according to claim 29, wherein said at least one additive is a wetting agent.

31. A surface-refined membrane according to claim 25, wherein the cleansing agent comprises at least one liquid selected from the group consisting of water and alcohols containing from 1 to 6 carbon atoms.

32. A surface-refined membrane according to claim 18, wherein the membrane is composed of at least one cellulosic material selected from the group consisting of cellulose nitrate and cellulose acetate.

33. A surface-refined membrane according to claim 18, wherein the membrane exhibits pore widths from 0.01 to 12 μm .

34. A surface-refined membrane according to claim 33, wherein the membrane exhibits a pore width of greater than 0.45 μm .

35. An apparatus for refining a surface of a membrane composed of cellulose produced by phase inversion in an evaporation process, said apparatus comprising:

- at least one membrane drawing machine for producing a feedstock membrane by phase inversion in an evaporation process;
- at least one membrane cleansing device for bringing at least one side of the feedstock membrane from which impurities are to be removed, into contact with at least one cleansing agent or cleansing device, and
- at least one membrane dryer;

wherein said membrane cleansing device is arranged between the membrane drawing machine and the membrane dryer.

36. An apparatus according to claim 35, wherein the membrane cleansing device comprises at least one rinsing device for rinsing the side of the feedstock membrane from which impurities are to be removed, with a cleansing liquid comprising at least one cleansing agent.

37. An apparatus according to claim 36, wherein a first rinsing device is arranged immediately downstream of the membrane drawing machine and a second rinsing device is arranged immediately upstream of the membrane dryer.

38. An apparatus according to claim 37, wherein said first rinsing device comprises at least one nozzle for spraying a washing liquid on the side of the membrane from which impurities are to be removed.

39. An apparatus according to claim 37, wherein said first and second rinsing devices each comprise a washing basin for holding a cleansing liquid, and guide rollers for transporting the membrane through the respective washing basins.

40. An apparatus according to claim 39, wherein the washing basin of the second rinsing device contains a washing liquid, which, in turn, contains at least one additive.

41. An apparatus according to claim 40, wherein the additive is a wetting agent.

42. An apparatus according to claim 35, wherein the membrane cleansing device comprises at least one wiper or suction device.

43. An apparatus according to claim 42, wherein each wiper comprises a wiper element having a width at least equal to the membrane and arranged on a resilient element so that when the membrane is moved relative to the wiper, the wiper element will sweep over the side of the membrane from which impurities are to be removed.

44. An apparatus according to claim 42, wherein the membrane cleansing device comprises a wiper roller with wiper elements arranged on an outer surface thereof, said wiper roller rotating in the direction in which the membrane is drawn, and at a speed greater than the speed at which the membrane is drawn.

45. An apparatus according to claim 44, wherein membrane cleansing device further comprises a support roller which rotates in the direction in which the membrane is drawn and at the speed at which the membrane is drawn, said support roller being arranged to form a nip with the wiper roller through which the membrane is guided.

46. An apparatus according to claim 43, wherein each wiper element comprises a rubber wiper or a brush.

47. An apparatus according to claim 36, wherein said rinsing device comprises a wash basin containing a cleansing liquid and at least one wiping element arranged above the wash basin to wipe cleansing liquid from the membrane emerging from the wash basin.

48. An apparatus according to claim 43, wherein said wiper elements are provided with nozzles for spraying a rinsing liquid onto the wiper elements.

49. A method of diagnostic testing for an analyte in a liquid test sample where the presence or absence of said analyte is indicative of a disease state, said method comprising contacting said test sample with a test strip containing a reagent which interacts with said analyte in a detectible manner, wherein said test strip comprises a membrane according to claim 18.